

Translation

PATENT COOPERATION TREATY

PCT/DE2003/00325



PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference T 44236WO/NZ/hs	<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/DE2003/003258	International filing date (day/month/year) 30 September 2003 (30.09.2003)	Priority date (day/month/year) 02 October 2002 (02.10.2002)
International Patent Classification (IPC) or national classification and IPC H01L 51/40		
Applicant LEONHARD KURZ GMBH & CO. KG		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 7 sheets, including this cover sheet.

☒ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 6 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☒ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 28 April 2004 (28.04.2004)	Date of completion of this report 21 January 2005 (21.01.2005)
Name and mailing address of the IPEA/EP	Authorized officer
Facsimile No.	Telephone No.

# INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/DE2003/003258

## I. Basis of the report

1. This report has been drawn on the basis of *(Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to the report since they do not contain amendments.)*:

☐ the international application as originally filed.

☒ the description, pages 1-24, as originally filed,  
pages \_\_\_\_\_, filed with the demand,  
pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_,  
pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_.

☒ the claims, Nos. \_\_\_\_\_, as originally filed,  
Nos. \_\_\_\_\_, as amended under Article 19,  
Nos. \_\_\_\_\_, filed with the demand,  
Nos. 1-29, filed with the letter of 04 January 2005 (04.01.2005),  
Nos. \_\_\_\_\_, filed with the letter of \_\_\_\_\_.

☒ the drawings, sheets/fig 1/14-14/14, as originally filed,  
sheets/fig \_\_\_\_\_, filed with the demand,  
sheets/fig \_\_\_\_\_, filed with the letter of \_\_\_\_\_,  
sheets/fig \_\_\_\_\_, filed with the letter of \_\_\_\_\_.

2. The amendments have resulted in the cancellation of:

☐ the description, pages \_\_\_\_\_  
☐ the claims, Nos. \_\_\_\_\_  
☐ the drawings, sheets/fig \_\_\_\_\_

3. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

4. Additional observations, if necessary:

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## III. Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non obvious), or to be industrially applicable have not been examined in respect of:

☐ the entire international application.

☒ claims Nos. 2

because:

☐ the said international application, or the said claims Nos. \_\_\_\_\_  
relate to the following subject matter which does not require an international preliminary examination (*specify*):

☒ the description, claims or drawings (*indicate particular elements below*) or said claims Nos. 2  
are so unclear that no meaningful opinion could be formed (*specify*):

☐ the claims, or said claims Nos. \_\_\_\_\_ are so inadequately supported  
by the description that no meaningful opinion could be formed.

☐ no international search report has been established for said claims Nos. \_\_\_\_\_

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## I. Basis of the report

1. This report has been drawn on the basis of *(Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to the report since they do not contain amendments.)*:

The amendments submitted with the letter of 4 January 2005 introduce substantive matter that, contrary to PCT Article 34(2)(b), goes beyond the disclosure in the international application as filed.

The application as originally filed does not mention a component with a plurality of layers, said layers including electric functional layers. A component as well as an organic transistor (preferred feature of the original claim 1) and a component with various previously described layers (original claims 3 and 9) are disclosed. A component such as the one according to the current claim 1 falls between the generic component according to the original claim 1 and the preferred component according to claim 1, 3 or 9. An intermediate disclosure such as this was not originally disclosed.

Therefore, lines 4-5 of claim 1 are not considered in the substantive examination.

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**Supplemental Box**

(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of: III.

**Non-establishment of opinion with regard to novelty,  
inventive step and industrial applicability**

Where a film already exists in its finished form, it is impossible to determine what steps were used to produce said film. It is thus impossible to know whether it is an embossed film or a laminated film or how the film layers have been structured.

Claim 2 relates only to method features that are not apparent in the claimed film itself. For this reason, claim 2 cannot be examined.

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## V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

## 1. Statement

Novelty (N)	Claims	6, 7, 9, 11-15, 17-19, 21, 22, 24, 25, 27-29	YES
	Claims	1, 3-5, 8, 10, 16, 20, 23, 26	NO
Inventive step (IS)	Claims	14	YES
	Claims		NO
Industrial applicability (IA)	Claims	1-29	YES
	Claims		NO

## 2. Citations and explanations

None of the device claim features relating to the production method (e.g. "laminated film") can have a restricting effect on the subject matter of the claims. Features such as this are therefore not considered in the substantive examination.

Claim 1 contains the method feature that one or more layers is/are formed with a spatial structure by means of thermal replication or UV replication, and it is the opinion of the applicant that these method steps are apparent in the finished film. The applicant's arguments cannot be accepted. It is true that a layer consisting of a non-thermally deformable but UV-curable material cannot be structured by thermal replication. However, it is impossible to discern that the layer was therefore structured by UV replication, since there are many other possible ways of obtaining a structured layer from UV-curable material (lift-off, compression, etc.).

The applicant further argues that the inner structure of the layers makes it possible to determine whether a layer has been thermally replicated or UV replicated. However, differentiating between these two alternatives does not suffice; rather it must be possible to recognize all of

the production methods employed in the inner structure of the layer. It seems unlikely that each production method results in a completely different inner structure in a layer, but if this should indeed be the case then the applicant must demonstrate this by means of comparative tests.

The method steps according to claim 1 are not taken into account in the substantive examination.

The phrase "in particular" does not have a restrictive effect on the scope of protection of the claims, and so any features following this phrase must be considered entirely optional. These optional features are also not being considered in the present substantive examination.

Reference is made to the following documents:

D3: WO 02/47183

D4: WO 01/08241.

Document D3 was cited by the applicant in the description.

Document D3 describes (see figure 1; page 2, line 25 to page 3, line 11 and page 5, lines 20-29) a film containing at least one component produced by organic semiconductor technology. A layer (2) with a spatial structure is formed, a functional layer (8) being completely severed in some places in the region of the spatial structuring.

Document D4 also discloses a film containing at least one component produced by organic semiconductor technology (see figure 7 and associated text). A plurality of layers (740, 760, 770) are formed with a spatial structure, these functional layers (740, 760, 770) being completely severed in some places in the region of the spatial structuring.

Therefore, the subject matter of claim 1 is not novel (PCT Article 33(2)).

The films known from documents D3 and D4 contain a series of layers: one layer consists of an organic semiconductor material, one layer consists of an organic electrically insulating material and two layers that are stamped out in patterns region by region consist of an organic electrically conductive material. The layers are located on a substrate, and the film can be considered a backing film or a film element (see D3, page 2, lines 25-36, and D4, page 3, lines 13-20). Therefore, the subject matter of claims 3-5 and 10 lacks the novelty required by PCT Article 33(2).

The film disclosed in document D3 has a lacquer coating (12) adjacent to the functional polymer layer (8). Therefore, the subject matter of claim 8 is not novel.

Document D4 relates to a TFT, which implicitly includes a series of thin film layers. Therefore, the subject matter of claim 16 is also not novel.

Using UV replication to structure a layer of a component that was produced by organic semiconductor technology is known from document D3 (see figures 1 and 2 and the associated text). The depth of the spatial structure created in the layer to be replicated is less than the thickness of the layer, an electric functional layer being applied afterward and being worn away to a depth such that a structured functional layer patterned according to the replicated structure remains. Therefore, the subject matter of claims 20, 23 and 26 lacks the novelty required by PCT Article 33(2).



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The prior art does not disclose or suggest forming a microstructure and a macrostructure between the layers of the film, said microstructure producing a diffraction effect as an optical feature and said macrostructure representing the structuring of a layer of the component. A film claimed with these features would therefore be considered novel and inventive.